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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,706	OHMI ET AL.	
	Examiner	Art Unit	
	Keath T. Chen	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/28/2006,02/17/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary amendment filed on 2/17/2007 has been entered. Claims 4, 8-13, 17, and 23-29 are amended.

Claim Objections

1. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The term "reduced-pressure processing apparatus" does not further limit "vacuum processing apparatus".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Antecedent basis for "organic matter" is unclear because two unrelated sets of "organic matter" are claimed in parent claims 1 (line 6) and 2 (line 2).

Based on specification, claim 4 will be interpreted as referring to claim 2; claims 7 and 8 will be interpreted as referring to claim 6.

3. The term "high (or low) attach/detach frequency" in claims 5-8, 14-29, and 31-32 is a relative term which renders the claim indefinite. The term "high (or low) attach/detach frequency" is not defined by the claim, and the specification (page 8, lines

19-23, multiple range of definition) does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

These claims will be examined as without structural limitations from "high (or low) attach/detach frequency".

4. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "low catalytic properties" is not clear. It is well known that the catalytic properties varies for different deposition sources materials. Besides, "low" is a relative term (see rejection 4 above).

Claim 18 will be examined with the broadest interpretation of "low catalytic properties" as a container materials that causes any deposition materials with a catalytic reaction rate that is acceptable for any vapor deposition purpose.

5. Claim 30-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "an organic matter emission prevention process" is not clear. It is not defined in the claim nor in the specification.

Claims 30-32 will be examined with the limitation of claim 3 as "emission prevention process".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 4-6, 8, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshiro et al. (English translation of JP2002-310302, hereafter '302).

'302 teaches all limitations of claim 1:

A vacuum processing apparatus comprising a pressure-reduction container ([0008]), exhaust means (vacuum housing requires exhaust means) joined to said pressure-reduction container, and a processing object introducing door ([0008], conveyance container requires an introducing door) connected to said pressure-reduction container through a gasket ([0008], line 2), said vacuum processing apparatus characterized in that one or more gaskets including said gasket of said processing object introducing door are made of a material with a small emission of organic matter ([0044]).

'302 further teaches the use of a perfluoroelastomer as the main component of gasket, made form polymerization of "tetrafluoroethylene" in [0010], line 2, and "CF2=CF-O (CF2)-1 –6-O-CF=CF2", line 8, perflorinated divinyl ethers (based on US 20070037922 and 3114778 for definition of perfluoroelastomer).

Therefore, '302 meets the limitations of claim 2 and 4:

Claim 2: The constituent material of said gasket contains organic matter.

Claim 4: A main component of said organic matter is a perfluoroelastomer.

'302 teaches all limitations of claim 5:

A vacuum processing apparatus comprising a pressure-reduction container ([0008]), exhaust means (vacuum housing requires exhaust means) connected to said pressure-reduction container, a processing object introducing door ([0008], conveyance container requires an introducing door) connected to said pressure-reduction container, and a plurality of gaskets (connection to introduction door and connection to vacuum exhaust needs at least two gaskets) for ensuring airtightness of said pressure-reduction container, said vacuum processing apparatus characterized in that a constituent material of the gasket, in said plurality of gaskets, for ensuring airtightness ([0040], last line) of a portion with low attach/detach frequency is at least one of a metal, a ceramic, and organic matter (connection to exhaust uses perfluoroelastomer as discussed in claim 4 rejection above).

'302 teaches all limitations of claim 5, as discussed above. '302 further teaches the use of perfluoroelastomer (see claim 4 rejection above) for all gaskets ([0008]), including the connection to introduction door. Therefore, '302 meets the limitations of claims 6 and 8:

Claim 6: A constituent material of the gasket for ensuring airtightness of a portion with high attach/detach frequency contains organic matter.

Claim 8: A main component of said organic matter is a perfluoroelastomer.

'302 teaches all limitations of claim 1, as discussed above.

'302 further teaches the limitation of claim 11:

A degree of vacuum at the time of treatment is 100 Torr or less ([0040], line 6).

'302 further teaches the limitation of claim 11:

Said vacuum processing apparatus is a reduced-pressure processing apparatus ([0040], line 6, vacuum is reduced-pressure).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over '302, further in view of Hisaharu et al. (English translation of JP06-107803, hereafter '803).

'302 teaches all limitations of claims 2 and 6, as discussed above. '302 further teaches the treatment of sealant in acetone.

'302 does not teach the limitation of claim 3:

The constituent material of said gasket has been subjected to a process of contacting it with water at 80.degree. C. or more.

'302 does not teach the limitation of claim 7:

At least one or more of the gaskets containing the organic matter have been subjected to a process of contacting them with water at 80.degree. C. or more.

'803 is an analogous art in the field of sealing material, particularly in solving the gas emission of fluororubber (abstract, lines 1-2). '803 teaches treatment of crosslinked rubber, including perfluoroelastomer ([0017] 2nd last two lines) in contact with a solvent, including water ([0037], line 1), at 95-100 C to lower gas emission (abstract, lines 8-10).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have combined '803 with '302. Specifically, to have treated the gasket made of perfluoroelastomer of '302 in water at 95-100 C according to '803 for the purpose of lower gas emission, with a reasonable expectation of success. Therefore, to have obtained the invention of claims 3 and 7.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over '302, further in view of Kenichi (English translation of JP09-189290, hereafter '290).

'302 teaches all limitations of claim 1, as discussed above.

'302 does not teach the limitation of claim 9:

Said exhaust means comprises a pump and causes a small amount of an inert gas to flow upstream of said pump or at a pump purge portion.

'290 is an analogous art in the field of vacuum processing device (abstract), particularly solving the problem of by-product contamination ([0004], lines 1-5]). '290 teach an inert gas supply (Fig. 1, #24) upstream from the vacuum pump (#22) for the purpose of automatically manageable vacuum processor, without depending on an operator ([0005], last 3 lines).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have combined '290 with '302. Specifically, to have included an inert gas supply port upstream from the vacuum pump of the vacuum processing apparatus of '302 for the purpose of automatically manage vacuum processor. Therefore, to have obtained the invention of claim 9.

11. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over '302, further in view of Ohmi, US 5863842, hereafter '842.

'302 teaches all limitations of claim 1, as discussed above.

'302 does not teach the limitation of claim 10:

Said exhaust means comprises a primary pump, a secondary pump connected to an exhaust side of said primary pump, and a gas introducing portion for introducing an inert gas between said primary pump and said secondary pump.

'842 is an analogous art in the field of vacuum exhausting apparatus (col. 1, lines 8-10), particularly in solving the problem of impurities (col. 1, lines 20-29). '842 teaches the use of a secondary pump (Fig. 1, roughing vacuum pump) connected to an exhaust side of a primary pump (Fig. 1, #103, turbo-molecular pump), and a gas introducing portion (#114) for introducing an inert gas between said primary pump and said secondary pump for the purpose of preventing reverse diffusion of the impurity (col. 1, lines 37-40).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have combined '842 with '302. Specifically, to have included a turbo-molecular pump and a roughing vacuum pump as the vacuum system for the

vacuum processing apparatus of '302, and to insert an inert gas supply in between, for the purpose of preventing reverse diffusion of the impurity. Therefore, to have obtained the invention of claim 10.

The examiner notes that the use of dual pump is common practice to obtain a high vacuum system.

The apparatus constructed by combining '842 and '302 above also meets the limitation of claim 13:

Said vacuum processing apparatus is a vapor deposition apparatus (as discussed in the claim objection above. Furthermore, '842, col. 3 line 65 refers to vapor deposition).

12. Claim 14, 24 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US 20020132047, hereafter '047), in view of Ouellet et al. (US 5935395, hereafter '395).

'047 teaches the limitations of claim 14:

A vapor deposition apparatus (Fig. 5) comprising a pressure-reduction container (#501), exhaust means connected to said pressure-reduction container (#513b), a substrate introducing door connected to said pressure-reduction container (#508), and a deposition source container (#509a and #509b).

'047 does not explicitly teaches the limitations of claim 14:

A plurality of gaskets for ensuring airtightness of said pressure-reduction container, said vapor deposition apparatus characterized in that a constituent material

of the gasket, in said plurality of gaskets, for ensuring airtightness of a portion with low attach/detach frequency is at least one of a metal and a ceramic.

Implicitly, the pressure-reduction container of '047 requires sealing means for ensuring airtightness.

'395 is an analogous art in the field of vapor deposition ('395, col. 1, lines 13-14 and '047, [0086]), particularly in solving the problem of providing high purity material for deposition ('395, col. 1, lines 52-54 and '047 abstract). '395 teaches the use of metal vacuum seals and alumina ceramics in order to achieve ultra-high vacuum, to maintain ultra-high purity gas distribution and to prevent cross contamination (col. 1, lines 43-45).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have combined '395 with '047. Specifically, to have used a plurality of metal vacuum seals as gaskets wherever necessary, including those connections with low attach/detach frequency, for ensuring airtightness for the purpose of preventing cross contamination. Therefore, to have obtained the invention of claim 14.

'047 further teaches the limitations of claim 24:

A deposition material put into said deposition source container is an organic EL element material ([0090], lines 2-4. The subject of '047 is about OLED).

'047 further teaches the limitations of claim 27:

A degree of vacuum at the time of treatment is 100 Torr or less ([0097], lines 4-6).

'047 further teaches the limitations of claim 28:

An organic EL element ([0002], lines 1-4) characterized by comprising an organic layer (abstract, last line) formed by the use of the vapor deposition apparatus according to claim 14.

'047 further teaches the limitations of claim 29:

An organic EL display device ([0004, lines 5-7) characterized by comprising an organic layer (abstract, last line) formed by the use of the vapor deposition apparatus according to claim 14.

13. Claims 15-23 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over '047 and '395 as applied to claim14 above, and further in view of '803.

'047 and '395, together, teaches all limitations of claim 14, as discussed above. '395 further teaches that metal and ceramic seals are expensive.

'047 and '395, together, do not teach the limitations of claims 15-17:

Claim 15: A constituent material of the gasket for ensuring airtightness of a portion with high attach/detach frequency contains organic matter.

Claim 16: Said gasket containing the organic matter has been subjected to a process of contacting it with water at 80.degree. C. or more.

Claim 17: A main component of said organic matter is a perfluoroelastomer.

'803 is an analogous art in the field of sealing material, particularly in solving the gas emission of fluororubber (English abstract, lines 1-2). '803 teaches treatment of crosslinked rubber, including perfluoroelastomer (machine translation of specification,

[0017] 2nd last two lines) in contact with a solvent, including water ([0037], line 1), at 95-100 C to lower gas emission (English abstract, lines 8-10).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have combined '803 with '047 and '395. Specifically, to have replaced the more often replaced gaskets with the perfluoroelastomer of '803 in an apparatus specified in claim 14 rejection above for the purpose of lower operating cost of gasket and to reduce gas emission (relative other type of rubber gaskets). Therefore, to have obtained the invention of claims 15-17.

'395 and '047 disclose the claimed invention except for where and when to use the less expensive perfluoroelastomer gaskets. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the perflouroelastomer gaskets where it needs more frequent replacement, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

'047, '395 and '803, together, teaches all limitations of claim 15, as discussed above. '047 further teaches that the crucible is made of quartz ([0070] lines 3-4, which clearly applies to #509a,b of Fig. 5). Therefore, the apparatus discussed in claim rejections of 15-17 above meets the limitation of claim 18-23 and 30-32:

Claim 18: Said deposition source container is made of a material with low catalytic properties (Quartz has low catalytic properties).

Claim 19: An inner surface of said deposition source container contains at least one of an oxide or a nitride of an element selected from Si, Cr, Al, La, Y, Ta, Ti, and B, or C (Quartz is made of Silicon).

Claim 20: Said deposition source container is made of a high thermal conductivity material (Quartz has high thermal conductivity).

Claim 21: Said high thermal conductivity material forming said deposition source container contains at least one of a nitride of Al, B, or Si, C or a metal material (Quartz is made of Silicon).

Claim 22: An inner surface of said deposition source container contains at least one of an oxide or a nitride of an element selected from Si, Cr, Al, La, Y, Ta, Ti, and B, or C (Quartz is SiO_2).

Claim 23: A vapor deposition apparatus according to claim 19, characterized in that the inner surface of said deposition source container is substantially smooth (Quartz is inherently smooth).

Claim30: A vacuum processing apparatus comprising a plurality of airtight sealing members, said vacuum processing apparatus characterized in that at least one of said plurality of airtight sealing members has been applied with an organic matter emission prevention process (Water treatment is an organic matter emission prevention process).

Claim 31: A vacuum processing apparatus according to claim 30, characterized in that the airtight sealing member having been applied with said organic matter

emission prevention process is subjected to higher attach/detach frequency as compared with the other airtight sealing member (as set forth above).

Claim 32: A vacuum processing apparatus comprising a plurality of airtight sealing members employed at portions that are detachably used, said vacuum processing apparatus characterized in that, in said plurality of airtight sealing members, the airtight sealing member at the portion with high attach/detach frequency and the airtight sealing member at the portion with low attach/detach frequency are made of mutually different materials and said airtight sealing member at said portion with the high attach/detach frequency is made of the material containing a perfluoroelastomer as a main component (as set forth above).

14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over '047 and '395 as applied to claim14 above, and further in view of '290.

'047 and '395, together, teaches all limitations of claim 14, as discussed above.

'047 and '395, together, do not teach the limitations of claims 25:

Said exhaust means comprises a pump and causes a small amount of an inert gas to flow upstream of said pump or at a pump purge portion.

'290 is an analogous art in the field of vacuum processing device (English abstract), particularly solving the problem of by-product contamination (machine translation of specification, [0004], lines 1-5], similar to '047 and '395 seeking to improve purity of deposition). For substantially the same reasons as discussed in claim 9 rejection above, the limitation of claim 25 is met.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over '047 and '395 as applied to claim14 above, and further in view of '842.

'047 and '395, together, teaches all limitations of claim 14, as discussed above. '047 further teaches:

Said exhaust means comprises a primary pump, a secondary pump connected to a discharge side of said primary pump.

'047 and '395, together, do not teach the limitations of claims 26:

A gas introducing portion for introducing an inert gas between said primary pump and said secondary pump.

'842 is an analogous art in the field of vacuum exhausting apparatus (col. 1, lines 8-10), particularly in solving the problem of impurities (col. 1, lines 20-29). For substantially the same reasons as discussed in claim 10 rejection above, the limitation of claim 26 is met.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 20070037922 and 3114778 are cited for definition of perfluoroelastomer. US 6092486 is cited for a perfluoroelastomer gasket close to lid. US 20020093148 is cited for a situation for single use gasket.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keath T. Chen whose telephone number is 571-270-1870. The examiner can normally be reached on M-F, 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kc KC

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PRIMARY EXAMINER